TO: **CHINESE DRYWALL COLLEAGUES** **JAN 31, 2010**
FR: **GARY ROSEN, PH.D.**
RE: **WHY WE NEED TO STUDY CHINESE DRYWALL HOMES THAT DON'T SMELL**

There are estimated to be 30,000-50,000 or more homes built with Chinese drywall but only a few percent have been identified as *problem homes*. That means that many homes with Chinese drywall are either not problem homes, or they are problem homes but have not been properly identified as problematic.

We know that quite a few homes with a known brand of problem Chinese drywall (such as Knauf Tianjin) DO NOT SMELL AND DO NOT IRRITATE OCCUPANTS.

Is the Chinese drywall found in such non-smelly homes from a manufacturing run that is low in contaminants and therefore not off-gassing sulfur gases?

Or are these homes full of off-gassing drywall but there is something different about these homes that keeps them from smelling?

> If there are homes with off-gassing drywall that do not smell, we need to understand why they are not problematic even though they are full of problem Chinese drywall.
>
> Perhaps such knowledge can be used to develop inexpensive fixes for problem Chinese drywall homes that do not involve removing the problematic off-gassing drywall.

It is only now that the CPSC findings confirm that copper wiring and copper plumbing are NOT damaged by Chinese drywall gases, and do not have to be replaced, that one can start to consider solutions that leave the Chinese drywall in place along with the copper wiring and plumbing.

WE NEED TO STUDY CHINESE DRYWALL HOMES THAT DON'T SMELL!

Possible reasons that homes with off-gassing Chinese drywall do not smell:

1. The home owner applied a thick layer of paint on the interior walls and then sealed all of the electric receptacles and light switch outlets as well as sealed all the openings around baseboard and any openings in the AC closet. Or,
2. Home was built with outside air ventilation that pressurizes the home and keeps Chinese drywall gases inside wall cavities rather than allowing them to enter the home. Or,
3. Home owner installed an activated charcoal filter in his air handler and turned the FAN=ON so that it continuously removes problem gases from the home.

4. Perhaps a combination of 1, 2 and 3?

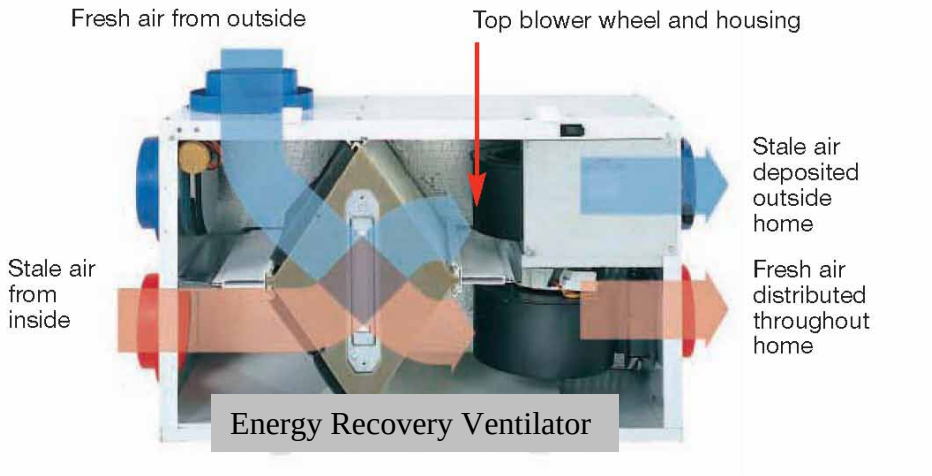
We do know that many new high rise buildings built with off-gassing Chinese drywall do not smell. Such buildings differ from single family homes in several ways that could impact the level of indoor sulfur gases:

- In such buildings, ventilations systems are always installed during construction to bring in outside air, keeping the building interiors under positive pressure which helps to keep the gases released from the drywall from entering the living space.
- In such buildings, electrical boxes and the bottom of the drywall are sealed (with fire rated sealant/caulking) also helping to keep the gases from entering the homes.

Similarly, sealing walls and bringing in outside air to pressurize single family homes would perhaps make Chinese drywall homes habitable – and for a fraction of the cost of replacing drywall.

In humid environments you cannot simply bring in untreated outside air to pressurize a home because this will bring in humidity that will lead to indoor mold growth. An *Energy Recovery Ventilator (ERV)* must be used that both brings in fresh air and at the same time dehumidifies it.

What is an Energy Recovery Ventilator (ERV)? See http://www.iaqsource.com/hrvs_ervs.php.



Energy Recovery Ventilator

ERV's are not expensive, generally costing less than $1500 and are relatively easy to install by ducting the fresh air supply into an existing AC closet. A building contractor can retrofit such a system into any home.

In fact, many new homes built to Green standards already include such ventilation systems. Some of these homes constructed to Green standards were built with Chinese

drywall and builders claim that the outside air ventilation systems significantly reduce levels of Chinese drywall odor.

This is to be expected:

- If you dilute out the bad air with clean fresh outside air you will certainly improve the indoor air quality.
- If you keep the homes pressurized and limit the emitted Chinese drywall gases from entering the home you will certainly improve indoor air quality.
- If the ERV reduces indoor humidity you will certainly reduce the Chinese drywall gases emitted by the drywall as drywall off-gassing requires high humidity.

Where Do We Go From Here?

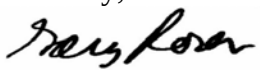
Again, it has been the recent CPSC finding that copper wiring and copper plumbing are NOT damaged by Chinese drywall gases and do not need to be replaced that is allowing us to start to consider solutions that do not involve removing drywall, copper wiring and plumbing.

The CPSC now needs to study Chinese drywall homes that do not smell in order to investigate possible alternatives to removing and replacing the drywall. Questions that need answering:

What alternatives are there (if any) that can make homes livable without requiring the Chinese drywall to be removed?

Can one improve the indoor air quality substantially by sealing and/or adding outside ventilation, perhaps enough that one can leave the Chinese drywall behind the kitchen and bathroom cabinets and remove only the easily accessible problem drywall?

Sincerely,



Gary Rosen, Ph.D., LEED AP
Ph.D. UCLA Biochemistry & Molecular Biology
AmIAQC/IAQA Certified Indoor Environmental Consultant
State Licensed Building Contractor CBC1250821
www.Chinese-Drywall.org
www.Mold-Free.org